WHAT IS CLAIMED IS:

1   1.   A shift control system, comprising:

2   a continuously variable transmission having a primary

3 pulley and a secondary pulley drivingly connected to the

4 primary pulley by a belt;

5   a shift actuator that regulates an oil pressure

6 supplied to either of the primary and secondary pulleys to

7 continuously vary an actual transmission ratio of the

8 transmission; and

9   a control unit that controls the shift actuator, the

10 control unit being configured to:

11   set a target transmission ratio in a first mode using

12 a shift pattern within a normal driving ratio control region

13 when a normal driving range is selected and in a second mode

14 using a shift pattern within an engine braking ratio control

15 region when an engine braking range is selected;

16   drive the shift actuator so as to adjust the actual

17 transmission ratio to the target transmission ratio;

18   determine a delay time to delay the setting of the

19 target transmission ratio in the second mode at the time of

20 range switchover from the normal driving range to the engine

21 braking range; and

22   hold the target transmission ratio set in the first

23 mode until the delay time has elapsed from the range

24 switchover.

1   2.   A shift control system according to Claim 1, further

2 comprising an oil temperature sensor that detects an oil

3 temperature of the transmission to determine a temperature

4 deviation from a predetermined oil temperature range,

5   wherein the control unit is configured to calculate the

6 delay time such that the delay time increases with increase

7 in the deviation.

1 3.   A shift control system according to Claim 2, further

2 comprising an engine speed sensor that detects an engine

3 speed,

4   wherein the control unit is configured to calculate the

5 delay time such that the delay time increases with decrease

6 in the engine speed.

1 4.   A shift control system according to Claim 1, further

2 comprising an engine speed sensor that detects an engine

3 speed,

4   wherein the control unit is configured to calculate the

5 delay time such that the delay time increases with decrease

6 in the engine speed.

1 5.   A control apparatus for a continuously variable

2 transmission having a primary pulley and a secondary pulley

3 drivingly connected to the primary pulley by a belt, the

4 apparatus comprising:

5   means for setting a target transmission ratio in a

6 normal driving mode when a normal driving range is selected

7 and in an engine braking mode when an engine braking range

8 is selected;

9   means for adjusting an actual transmission ratio of the

10 transmission to the target transmission ratio;

11   means for increasing a line pressure of the

12 transmission in response to range switchover from the normal

13 driving range to the engine braking range; and

14   means for delaying the setting of the target
15 transmission ratio in the engine braking mode until the line
16 pressure substantially reaches a the target value.

1 6.   A shift control apparatus according to Claim 5, further
2 comprising means for determining a time period required to
3 increase the line pressure by a predetermined pressure value
4 after the range switchover, .
5   wherein said delaying means delays the setting of the
6 target transmission ratio in the engine braking mode until
7 the determined time period has elapsed from the range
8 switchover.

1 7.   A control apparatus according to Claim 6, further
2 comprising:
3   means for detecting an oil temperature of the
4 transmission to define a temperature deviation from a
5 predetermined oil temperature range; and
6   means for detecting an engine speed,
7   wherein said determining means determines the time
8 period such that the time period increases with increase in
9 the temperature deviation and increases with decrease in the
10 engine speed.

1 8.   A control method for a continuously variable
2 transmission having a primary pulley and a secondary pulley
3 drivingly connected to the primary pulley by a belt, the
4 method comprising:
5   setting a target transmission ratio in a first mode
6 using a shift pattern within a normal driving ratio control
7 region when a normal driving range is selected, and in a second

8 mode using a shift pattern within an engine braking ratio

9 control mode when an engine braking range is selected;

10   controlling an oil pressure supplied to either of the

11 primary and secondary pulleys of the transmission so as to

12 adjust an actual transmission ratio of the transmission to

13 the target transmission ratio;

14   determining a delay time to delay the setting of the

15 target transmission ratio in the engine at the time of range

16 switchover from the normal driving range to the engine braking

17 range; and

18   holding the target transmission set in the first mode

19 until the delay time has elapsed from the range switchover.

1 9.   A control method according to Claim 8, further

2 comprising:

3   detecting an oil temperature of the transmission to

4 define a temperature deviation from a predetermined oil

5 temperature range; and

6   detecting an engine speed,

7   wherein said determining includes:

8   calculating a first delay time period based on the

9 detected oil temperature such that the first delay time period

10 increases with increase in the temperature deviation;

11   calculating a second delay time period based on the

12 detected engine speed such that the second delay time period

13 increases with decrease in the engine speed; and

14   determines the delay time as a longer one of the first

15 and second delay time periods.